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Privatizing Public Lands: Market Solutions to Economic and Environmental Problems

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PRIVATIZING PUBLIC LANDS: MARKET SOLUTIONS TO ECONOMIC AND ENVIRONMENTAL PROBLEMS

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I. INTRODUCTION

Should land now in government hands be privatized—turned over to the private sector? Those who say no argue that private sector decisions, made by private owners, tend to seek short-term profits, to be short-sighted in general, and therefore to treat land poorly, causing environmental devastation in the process. This paper scrutinizes this view, addressing the question of the impact of private ownership on environmental quality in general, looking especially at the question of shortsightedness.

Are private land use decisions worse for future citizens than public decisions? To some extent, we must address the question indirectly because it is difficult to compare management of government land and management of private land. Government land is rarely sold or traded so we do not have good information about its value. Without markets, it is difficult to know if the government has been a good steward as measured by changes in the value of the land, or to determine if land is worth more or less than land that has been in private hands.

Simply looking at data on the physical condition of the land is not sufficient, in part because the goals of government management change with elections and the change of administrations. National forests once valued for their timber production may now be viewed as places where trees should be preserved until they succumb to fire, disease, or insects. Is cut-over land that is replanted good (because it is a sign of renewable harvest)? Or is it bad (because it is a sign of old growth destroyed or habitat disturbed)? Similarly, should grazing land be evaluated as forage for livestock or for elk and other wild animals? Viewpoints differ.

Still, there are some cases where public and private decisions can be directly observed and objectively compared. When we make such comparisons, we find that the claim that private decisions look more to the present and less to the future than do public decisions is not supported. In this paper we will marshal several pieces of evidence that suggest that over the long run a market system in which most resources are privately owned is better for environmental protection than is a system in which government ownership predominates. The logic driving such a conclusion is summa-

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rized in the following three points:

1) Enforced, tradeable property rights, enforceable at common law, protect people from excessive pollution, just as they protect individuals and property from damage from other sources.[1] Private owners have the standing, or the right (as do government owners or trustees) to sue for injunctive relief, to stop those who would damage their property, or after the fact to sue for damages. Also, private owners, with their personal wealth at stake, have the incentive to be alert to possible damages and to be aggressive in protecting the resources they own. Once precedents are set in the defense against pollution, then in future cases where court decisions are predictable, few owners will have to actually go to court in order to protect their property rights against harmful pollution from sources similar to those in settled cases. Contingency fees and class action suits can help owners to reach court in novel cases and in cases in which the facts do not convince polluters to a pretrial settlement.

2) Private rights require that users pay the costs of the resources they use, unlike government decisions, which distribute the costs of resource use according to the political process. Thus, private ownership limits waste because users, who must pay, seek to reduce resource use in order to minimize costs. Furthermore, the fact that users pay market value to use a resource means that resource demands are limited automatically, as product users try to reduce costs, in sharp contrast to resource demand in the public sector, where the price of use (but not the cost to other users) is typically zero and demands thus much less constrained. Battles over public lands are classic examples of relatively unconstrained demands, each user group, not having to pay for what it demands believes its mission—and thus its demands—to be far more important and even more noble, than the missions of other groups. Nasty political battles over the relative merits of alternative land uses, and the merits of the users, are the normal result.

3) Markets enable the economic participants in a nation to become more innovative and more prosperous. Because private individuals and firms finance their own innovations (rather than relying on governmental support), they need to convince only a few investors, not the average voter or the Congress, that devoting resources to trying a new idea is worth the risk. Those who provide capital for successful ventures earn profits, at least temporarily; those who finance losing ventures experience losses. Each reaps what he sows.

This applies even to short-term investors, because liabilities incurred are capitalized into asset value as soon as they can be discovered by actual and potential investors. For example, when word gets out that Acme Corp.

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1. *See generally,* BRUCE YANDLE, COMMON SENSE AND COMMON LAW FOR THE ENVIRONMENT 95-115 (1997) (explaining common law protection of property and environment).

has unexpectedly incurred a large liability (or is even rumored to have done so), Acme stock is likely to fall immediately, instantly punishing those holding the stock. Similarly, word of a new product or policy that will reduce costs without revenue reduction, or increase revenue more than cost, will reward stockholders of the moment with a stock price increase. The creation of net value, and the accrual of liability are both capitalized into asset values as soon as investors can know, or even strongly suspect them. Of course the firm may try to hide its liabilities or its liability-connected actions from possible victims, both physical and financial, just as a criminal will try to hide a crime. But investors, even more than the police, have a personal financial incentive to be the first to know about hidden problems. After all, their personal wealth is at stake, and the investor who knows early can "bail out" of an ownership stake by selling quickly, before the market value falls. But such sales drive the price down and become a warning and a punishment to others who were less careful or less observant. Hiding liability problems is difficult, especially when there are professional investment advisors who specialize by industry, and environmental watchdogs ready to blow the whistle. Yet concealment happens. The system, like crime control and regulation, is not perfect.

An additional problem here can be the judgement-proof tort-feasor or investors hiding behind the corporate veil and operating a corporation with little asset value. They may incur a liability for which recovery is impossible. That is why, for clearly dangerous activities, this author among others has suggested that regulators require a bond as a "hostage" to good (liability-free) management.[2] For the corporation with large capital value, however, this is not a problem. The corporation can be held to account, and each investor stands to suffer his or her share of any loss.

The market system provides firms with the ability and incentive to innovate, spurring technology, which typically reduces the industrial waste which is the greatest source of pollution in the production process. It makes more efficient resource utilization possible. So long as property rights are enforced, the possible liability of a new technology (and the impact of existing or possible injunctions) will be compared to its cost. Because trade and innovation increase prosperity, this sort of regime encourages environmental protection. A richer citizenry has the willingness and the ability to achieve the environmental protection that as poorer people they could not. The results have been impressive differences among nations according to the degree to which each emphasizes market allocation of resources rather than governmental (political) decisions. The

2. Richard L. Stroup, *Hazardous Waste Policy: A Property Rights Perspective*, 20 ENV'T REP. 868-73 (Bureau of National Affairs Sept. 22, 1990).

market nations of western Europe, for example, used far less energy and steel, per unit of output, than did the socialized nations of eastern Europe.[3] A richer people can also use added materials, increasing throughput. But prosperity is important to the ability and willingness of citizens to make sacrifices in order to achieve a safer, cleaner and more pleasing environment. In the boom decades for market economies that followed World War II, the net result was cleaner air, despite greater industrial production. Indeed, in the United States, the air was becoming cleaner more rapidly in regard to particulate and sulfur dioxide in the 1960s, before the 1970 Clean Air Act, than it did following the act, in the 1970s.[4]

Before going further on these points, it will be useful to clarify what is meant, here, by private ownership. Primarily, it means 1) the recognition and protection of property rights to resources, including land; and 2) the ability of owners of rights to trade them through contracts to sell, lease, and make rental arrangements. Private ownership of a resource means that the owner can decide where a resource will be best employed among alternative uses in time and space, and can take action to achieve that goal. Owners reap the benefits of good decisions personally, but personally suffer the costs of failure to protect the value of the resource, or allowing it to be wasted, or using it in a way that does harm and creates liability That is how, in a system of private ownership, owners are personally and financially accountable for their decisions. This includes owners (shareholders) of corporations, as a corporation's stock price fluctuates with increase liability or increased profit potential.[5] But in most cases the individual's decisions are limited to which corporate shares to buy and which to sell. Managers and boards of directors are, in effect, hired by shareholders to make specific investment and other business decisions for the shareholders.[6]

II. THE LINK BETWEEN FREEDOM AND PROSPERITY

There is no longer any doubt that the economies that are oriented toward free markets—those with less government involvement in decision-making and a greater emphasis on private property—have performed better economically

Figure 1, from the recent work of Gwartney and Lawson, illustrates the strong relationship between private control of the economy and the

3. MIKHAIL BERNSTAM, THE WEALTH OF NATIONS AND THE ENVIRONMENT 24 (1991).

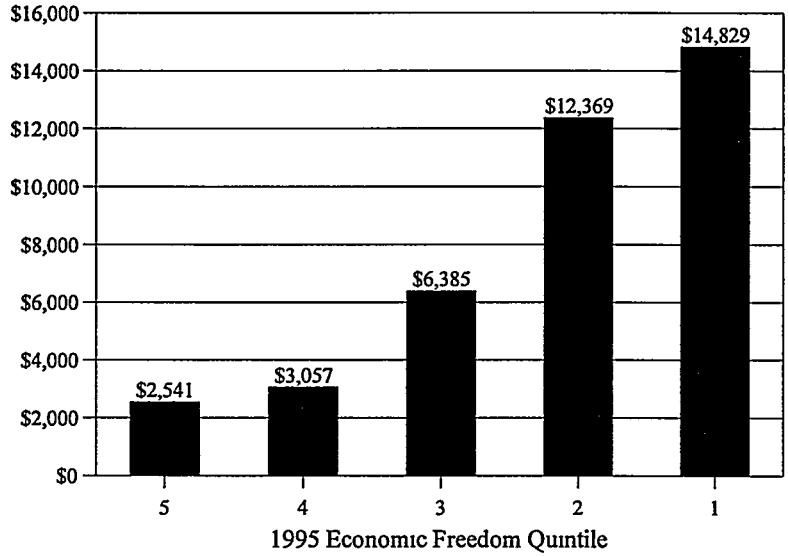
4. *See* ROBERT W CRANDALL, CONTROLLING INDUSTRIAL POLLUTION: THE ECONOMICS AND POLITICS OF CLEAN AIR 19 (1983).

5. Michael Jensen & William Meckling, *The Theory of the Firm: Managerial Behavior Agency Costs, and Ownership Structure*, 3 J. OF FIN. & ECON. (1976).

6. JAMES GWARTNEY & RICHARD STROUP, PRIVATE AND PUBLIC CHOICE (8th ed. 1997).

achievement of prosperity and economic growth.[7] Those economies with greater degrees of economic freedom (greater private control) are assigned higher scores by Gwartney and Lawson on the basis of composite, objective published data. Higher scores reflect a greater role for private owners, and a greater freedom on their part to trade with others. The figures show that economies with a greater role for private ownership and decisions tend strongly to exhibit both greater prosperity and more rapid economic growth. As a result of this relationship, policies in many nations around the world are moving away from government ownership and management of resources.

Per Capita GDP (1995 U.S. dollars)

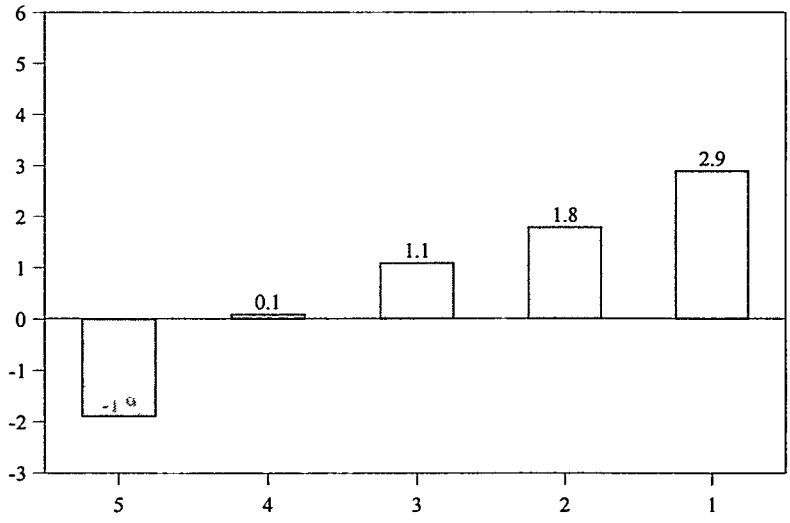


In other words, the payoff to citizens, in the form of a higher standard of living, and one that rises over time, is greater when a larger proportion of decisions is made privately, by individuals who are more personally accountable for the costs as well as the benefits resulting from those decisions.

Private decision making does not imply the absence of government. Trading begins only after rights are delineated, often in common law

7. JAMES GWARTNEY AND ROBERT LAWSON, ECONOMIC FREEDOM OF THE WORLD 34 (1997).

Growth of Real GDP per Capita, 1985-86



courts ruled largely by precedent (the results of previous decisions).[8] Owners with established rights can make offers to buy, sell or trade. It is the offers to buy and sell that provide the constant flow of information and incentives that tends automatically to weed out inefficient trade-offs—less for buyer and/or seller—of all sorts. When producers are paying the full costs of what they sell because they are liable for pollution and other costs, and when buyers must pay the full value of what they get and use, because they cannot pass costs on to others, then the waste of resources is costly and thus undesired. It is when government is unable or unwilling to protect individual property rights against cost imposed by others that private decisions fail to properly discipline producer/sellers and user/buyers.[9]

Private decision making thus has favorable impacts on environmental quality, to the extent that resource users pay full costs for materials, and polluters are held accountable for damages they cause (or are restrained by injunction from damaging others). For example, waste is reduced because no one is forced to subsidize inefficient investments or other expenditures.

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8. *See* Roger Meiners, *Elements of Property Rights: The Common Law Alternative*, *in* LAND RIGHTS: THE 1990'S PROPERTY RIGHTS REBELLION 269-93 (Bruce Yandle ed., 1995) (describing the history of the common law and its role in protecting property and the environment).

9. *See* STEVEN E. LANDSBURG, PRICE THEORY AND APPLICATIONS 403-11 (1988) (explaining incomplete property rights, in which users may not pay the cost of what they use).

Subsidies, however, or other forms of failure to recognize and enforce the rights of those harmed will reduce the benefits of private decision making.[10]

Another result of market decision making is that relatively little acrimony is produced. We can assume that offers to buy, sell or trade are carefully considered and seldom falsified because the traders pay the prices and receive the revenues themselves. There is little incentive in a market to posture, or to adopt sanctimonious attitudes and condemn other user demands as frivolous, as so often happens in discussions over the use of federal land. An illustration of the contrast between the constructive nature of private negotiations and the contentious nature of political discussions between parties of vastly different priorities is the example of the National Audubon Society While officials of the Audubon Society are outspoken and hostile in their arguments against oil drilling on a federal wildlife refuge in Alaska, they have worked comfortably and peaceably with the private oil company that they have allowed to produce natural gas on the Rainey Preserve, which the National Audubon Society owns in Louisiana.[11] Gas is produced only after Audubon's strict stipulations are met by producers; Audubon uses the resulting revenue to enhance its mission on the refuge and elsewhere. Audubon has the right to determine what happens on its land, and it has strong incentives to avoid risking the loss of support from its members by allowing damage to the habitat it owns; but it also has the right to gain support for its mission by producing petroleum—Audubon's mission can be given a net gain by natural gas revenues that contribute more than the tiny losses to existing habitat resulting from the careful petroleum extraction procedures.[12]

While the ability of markets to produce efficient utilization of resources and prosperity for market participants is seldom questioned today, the effect of markets on environmental quality is another matter. Everyone recognizes that markets often fail to produce ideal results. That is especially true when courts are unable to protect the rights of resource owners. If pollution is harming one or more landowners, for example, but the owners cannot show by weight of the evidence that they are being harmed, courts cannot stop the polluter, nor make him pay If the harm is real and significant in such a case, then a negative effect of production is not represented in the market. The producer is not paying the full cost of production, and

10. *Id.* at 232-36.

11. *See* Pamela Snyder & Jane S. Shaw, *PC Oil Drilling in a Wildlife Refuge*, WALL ST. J., Sept. 7, 1995, at A14 (giving a brief history and overview of the Audubon's decisions on its Paul J. Rainey Sanctuary).

12. *See also* John Baden & Richard Stroup, *Saving the Wilderness: A Radical Proposal*, REASON, July 1981, at 28-36 (describes and explains this type of decision-making process).

need not take fully into account the environmental harm. Failure by the courts to protect property rights can prevent the proper flow of incentives to market participants, in the same way that failure to enforce laws and regulations of any sort can defeat the intent of the law

Further, there are entire classes of pollution problems, from air pollution in the Los Angeles basin to carbon dioxide emissions and their potential effects on global climate, that cannot be handled directly by the property rights/common law/market approach. There are simply too many polluters and too many victims of pollution (perhaps the same individuals). Many individuals suffer, but each may suffer only a little.[13] Who will undertake a lawsuit? Settlement of such problems is more logically political (statutory and regulatory) rather than by enforcement of individual rights.

Markets clearly are imperfect. But the important question is: Compared to what? Government ownership or regulatory control are often suggested, and offer the hope of improvement. But will these options in fact produce superior results? More precisely, the important question is this: where and when will private rights and markets perform better than the available alternatives, the major one being direct government control?[14] Suppose there is a case of runoff water pollution, allegedly coming from a forest and causing harm downstream. The traditional private sector remedy is for the harmed party to sue for relief. But the absence of good information on whether the runoff from the forest in this case is harmful, for example, can make it difficult to enforce the rights of those downstream to be free of harm; and enforcement is necessary for a working market. But in that situation, can anyone, in government or not, make better decisions than the courts?[15] When research on such matters is reviewed and published, and when experts can be brought to court or to an agency, then both systems have access to the same expertise. It is certainly true that judges and juries are not experts; but in court they must listen to experts on both sides before rendering a decision. That is not true of those same individuals when they vote in an election, or when they vote as elected representatives. They are unlikely to be as informed as if they had in fact been present through a trial of the facts, with its burden of proof, rules of evidence, and rights of cross-examination. Absent the problem of large numbers of polluters and victims, there is no obvious reason to be-

13. For a discussion of this problem, *see* TERRY L. ANDERSON & DONALD R. LEAL, FREE MARKET ENVIRONMENTALISM 139 (1991).

14. *See generally* NEIL K. KOMESAR, IMPERFECT ALTERNATIVES (1994) (Chapters One and Two fully explain the nature of this institutional choice question).

15. *Id.* (Chapters Three, Four, and Five compare the strengths and weaknesses of courts, the market and political regulation).

lieve that courts must be less informed as they decide an issue than voters, or even congressional representatives, will be on that same issue.

Will control of pollution be weaker under common law than under direct control of government? There is in fact a good deal of evidence in Canada where, as in the United States, statutory law and government control has been replacing decisions by private owners, that as the political or statutory approach supplanted the common law approach to pollution, protection of victims was weakened. As researcher and writer Elizabeth Brubaker says, after citing dozens of legal decisions and statutes, in 160 heavily footnoted pages of evidence: "Governments have shown that they are not up to the task of preventing resource degradation or pollution; indeed they have often actively encouraged it. It is long past time for resources to be shifted away from governments and back to the individuals and communities that have strong interests in their preservation. Such a shift can best be accomplished by strengthening property rights and by assigning property rights to resources now being squandered by governments."[16] The bottom line is this: Individuals with property rights against those who might harm them—governments included among those who may do harm—will gain by finding ways to use those rights effectively to protect themselves and their resources.

III. EFFICIENCY: A KEY TO ENVIRONMENTAL QUALITY

While markets based on private property rights are strongly associated with efficient allocation of resources and thus increased prosperity, economic efficiency may seem inconsequential for some who care very strongly about a clean, healthy and pleasant environment. The evidence, however, is that economies based largely on private property and private decisions not only promote economic efficiency and the prosperity that results: They generally serve environmental goals as well.[17] There are four major reasons:

The first is the impact of wealth itself: "Wealthier is healthier." Among human beings, those who are wealthier generally enjoy greater health. Aaron Wildavsky explored the many reasons that people who are more prosperous, and those who simply live in a prosperous society, live healthier lives in general, and live longer.[18] A more prosperous community, with its greater levels of education, better sewage facilities, cleaner

16. *See* ELIZABETH BRUBAKER, PROPERTY RIGHTS IN DEFENSE OF NATURE 161 (1995).

17. *See* WORLD DEVELOPMENT REPORT, 1992 (1992) (Chapters Two and Three provide a detailed look at the connection between property rights, economic development and environmental quality).

18. AARON WILDAVSKY, SEARCHING FOR SAFETY CH. 3 (1988)

water and superior infrastructure in general, better emergency response programs, and other characteristics sought and paid for by a wealthier citizenry, can provide a cleaner, healthier and more pleasant environment in which to live. Many factors explain this strong connection, but protection of the natural environment against unhealthy contamination is a significant part of that total environment.

Second, economic efficiency fosters technical efficiency, which reduces waste and cuts pollution. How? There are many ways that we can observe this happening in the world around us. For example, Mikhail Bernstam has compiled data comparing environmental results in the largest industrialized market economies, which are market-based, with its use in the Eastern European socialist countries.[19] Efficiency in market nations led to reduced pollution.[20] As noted above, market-based economies in western Europe, as elsewhere, used far less energy per $1,000 worth of output than the socialist nations of eastern Europe in 1986.[21] Similarly, the European socialist economies used far more steel per unit of output than the European market economies did.[22] The government data used by Bernstam show that across a variety of command-and-control economies, resource use is far greater per unit of output than across a variety of market-oriented economies. More efficient use of resources generally means less waste in production, and thus less pollution.[23] The bottom line is this: Control of resources by bureaucracies does not bring the same pressures and personal incentives to conserve resources that mark private ownership and market decisions. So bureaucratic decisions tends to be less efficient and more wasteful, and thus less environmentally friendly

Third, the demand for environmental quality is a function of income. Economist Donald Coursey finds that in the United States and in other industrial nations, citizens' support for measures to improve environmental quality is highly sensitive to income changes.[24] He estimates that in industrial nations, a change in income causes a change in the demand for environmental quality that is 2.5 times as large as the income change. Thus, a 10 percent increase (decline) in income leads to a 25 percent increase (decline) in citizens' willingness to pay for environmental measures. Coursey notes that everyone wants a cleaner environment; richer people are more willing and able to divert resources from producing food, shelter, clothing, schooling and so on, to protecting environmental quality

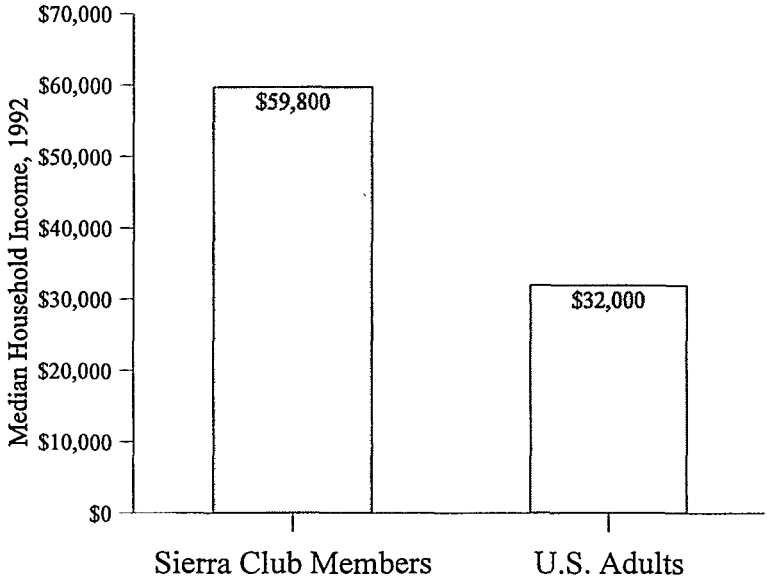
19. *See* BERNSTRAM, *supra* note 3, at 1-50.
20. *Id.* at 15-22.
21. *Id.* at 23.
22. *Id.*
23. *Id.* at 41-44.
24. Donald Coursey, *The Demand for Environmental Quality*, American Economic Association (Anaheim, CA; 1993).

Coursey's data show that citizens' demand for environmental quality reacts to a change in income in the same way and to the same extent as does their demand for luxury automobiles like the BMW and Mercedes-Benz, suggesting that we should think of environmental quality as a BMW Make people richer and the market for the environment (e.g. donations to environmental organizations, willingness to accept effective environmental regulations, and the demand for environmentally attractive homes and vacations) will boom. It is no accident that the Sierra Club draws its members disproportionately from Americans with high incomes, as shown below [25] But policies that induce inefficiency or in other ways reduce economic growth will diminish the willingness and ability of people to devote more resources to environmental goals will fall.[26]

25. Mediamark Research, Inc., *Sierra Reader Survey: 1992* (1992) (Distributed by the Sierra Club, describing the demographics of the readership of its membership magazine).

26. Three lessons emerge here--two political, the third moral. First, supply side and "opportunity" conservatives must recognize that if and as they help the population become more prosperous, a strong and genuine increase in the demand for environmental quality follows, and they will lose political favor without a positive environmental program. The second is that environmentalists and their supporters must recognize that larger donations and other support for environmentalism are strongly contingent on greater income for their constituents; environmental policies that undercut efficiency and prosperity will undercut support for environmental goals more than proportionately. The third, more moral lesson is that to divert resources to Sierra Club members' goals at the expense of all people, including the poor (via higher costs for goods taxes) may serve those members well, but will not find so much favor from those who do not choose to join (or cannot afford the relatively low membership fee of) the Sierra Club. For them, the cost of higher environmental quality is too great until they, too, become more prosperous.

High Income of Environmentalists[26]



A fourth reason that environmentalists should want to make environmental policy efficient is this: People will choose more of a good or service, including a more effective environmental policy, when it delivers results at a lower cost. Inefficient policies will not sell as well to voters, donors, and other supporters (rich or poor),[27] *ceteris paribus*. Efficient policies to maintain and increase environmental quality will be an easier "sell" for those of us seeking greater environmental quality A rights-based policy, in which inefficient elements can be eliminated by voluntary trading between polluters and potential pollution victims, for example, can greatly reduce the cost of reaching any particular environmental goal. Under command-and-control policies, such mutually beneficial trading between polluter and receptor is almost never allowed.

One reason why the Environmental Protection Agency's Superfund program, designed to protect citizens and their natural resources from pollution emanating from hazardous waste dump sites, has been so roundly criticized and condemned is its utter lack of economic (and environmental) efficiency [28] Voters, and even the members of congress who criticize the program bitterly, have not been able to change the program very much because each of many powerful factions is, as normally happens in the political process, holding out for the best deal for itself. This is an

27. *See generally*, Coursey, *supra* note 24.

28. JAMES V. DELONG, PRIVATIZING SUPERFUND, (Cato Institute Policy Analysis No. 247, 1995) (discussing the nature and extent of Superfund's inefficiencies).

inherent weakness in the regulatory system, similar to that which often stymies wilderness bills and other federal land use legislation in congress. Such a problem occurs in the private sector too. But there, by contrast, holdouts more often find that other buyers, or other sellers have satisfied their would-be trading partners.

How inefficient is Superfund? One measure among many is that in 1992, the EPA reported that its overhead costs in 1988 were on average more than $328 for every hour of work performed by an individual, normally a contractor's employee, in cleaning up a site. (That is $430 in 1996 dollars, or $860,000 in EPA overhead cost for each person-year spent actually cleaning a site.) This does not include the wage and other direct costs, or the overhead cost charged by the contractor.[29] The program is not only costly: much of the expenditures have little value in reducing the primary target of most cleanups to date—cancer risk.[30] For example, two Superfund researchers, commenting on their work (funded by EPA) say: "More than 95 percent of EPA's expenditures on Superfund will entail a cost per case of cancer in excess of $100 million per case. This is clearly unreasonable."[31] In addition, billions of dollars are spent each year, nearly a third of which is litigation costs.[32]

In summary, then, those who seek a cleaner and healthier environment have several reasons to favor efficiency (that is, market allocation): To gain the health benefits that wealth brings; to reduce resource waste and pollution production; to increase the prosperity that fosters higher environmental goals; and to reduce resistance to environmental goals by achieving them at lower cost.

All of this is not to suggest that there is no place for regulation. Market allocation is only as effective as the definition and enforcement of property rights over resources. There are cases such as those cited earlier—smog in the Los Angeles basin was one—which cannot be dealt with effectively without government control beyond the protection of property rights. Clearly, market allocation is not a panacea. The argument here, instead, is that market allocation is often under-rated, especially where the ownership and management of land is concerned.

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29. *See* 57 Fed. Reg. 34755 (1992). The indirect cost figure of $340 was derived by taking the $328.80, the simple average of costs across the ten regions, and updating to 1996 dollars using the CPI-U, all items.

30. W. Kip Viscusi & James T. Hamilton, *Cleaning Up Superfund*, 124 PUB. INTEREST 52, 56 (1996).

31. *Id.* at 59.

32. LLOYD S. DIXON ET AL, PRIVATE SECTOR CLEANUP EXPENDITURES AND TRANSACTION COSTS AT 18 SUPERFUND SITES 45 (Rand Institute of Civil Justice, 1993).

IV How Property Rights Contribute to Environmental Quality[33]

The efficiency that comes from a market system has environmental benefits, as we have seen. However, private property rights have more direct environmental benefits as well.

To begin with, a resource owner has a strong incentive to exercise good stewardship. Private ownership of property provides an incentive for good care of the owned resource. If the resource is well cared for, it will be more valuable and add more to the wealth of its private owner. If the owner allows the resource to deteriorate, he or she personally bears the cost of that negligence in the form of a decline in the value of the resource. The value of the property right to the resource is, in a very real sense, a hostage to the owner's provision of good care for that resource. The same personal financial stake is not present for a government manager.

Second, in a private property/market system, a resource owner has legal rights against anyone (usually including a government agency) who invades—by physical presence or by pollution—and harms the resource. Much environmental damage is prevented this way The private owner of a forest or a farm will not sit idly by if someone is cutting down trees without permission, or invading the property with hazardous pollutants. Lawsuits can be used to protect those rights. For example, owners of copper and lead smelters in the United States have been forced to compensate owners of land and homes for damage from sulfur dioxide emissions.[34] Once such a company has been successfully sued, the decision sets a legal precedent that discourages such action by that and other potential polluters similarly situated. If (and only to the extent that) property rights are protected under common law, the environment will be protected against unwanted and harmful pollution. Note, however, that a protected right to be free of harmful pollution can and sometimes will be sold to a polluter. Just as some individuals buy cheap small cars that are far less safe than larger, more costly ones, and not every safety regulation is tightened to the greatest possible degree, some individuals will allow their land to be polluted. Municipal dumps, for example, can often purchase private land which is then "polluted" when it was fully protected from pollution prior to the sale of the property right. Still, the protection of rights can and has very often held pollution down.

In contrast, when resources are not privately owned, no individual will receive large personal rewards for bringing suit against polluters, even

33. *See* GWARTNEY, *supra* note 6.

34. YANDLE, *supra* note 1, at 96-107.

when the source of the pollution is clear, and even when statutes provide for the coverage of attorneys' fees. In the United States, when fish in a river are damaged by pollution, the government is responsible for protecting them, because they have no private owner with a strong personal incentive to protect them.[35] In England, however, fishing rights on a stream (but not the fish or the water) are privately owned, and the owners jealously guard the quality of the water because pollution can reduce the value of those fishing rights.[36] Some landmark lawsuits there, long before the first Earth Day, set precedents in common law against polluters that to this day dissuade potential new polluters from harming the fish or the streams.[37]

V ARE MARKETS SHORTSIGHTED?[38]

In spite of these facts, distrust of private ownership, especially in the context of environmental resources, remains widespread. The assumption that private owners would be too impatient, and thus unwilling to make the necessary investments needed to provide the future with sufficient forest resources, was the chief reason for the formation of the U.S. Forest Service at the turn of the century, as indicated in the statements of noteworthy individuals over the decades such as Bernard Fernow, first Chief of the Forest Service (then called the Division of Forestry) who said, "the time element, together with the large capital required in timber-wood production, renders the forestry business undesirable to private enterprise of circumscribed means."[39] Forests, he said, should be owned by government because "the maintenance of continued [timber] supplies is possible only under the supervision of permanent institutions with whom present profit is not the only motive. It calls pre-eminently for the exercise of the providential functions of the state to counteract the destructive tendencies of private exploitation."[40]

Fernow was far from alone. Harold Hotelling, a prominent natural resource economist, warned in the 1930s that the world's finite supply of natural resources was being rapidly, and perhaps irrevocably, depleted for

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35. *See, e.g.*, Scott H. Gordon, *Economics and the Conservation Question*, 1 J.L. & ECON. 110 (1958).

36. Jane S. Shaw & Richard L. Stroup, *Gone Fishin'*, REASON, Aug.-Sept. 1988, at 34-37 (describing the English-Scottish system of common law protection of fishing rights against polluters).

37. YANDLE, *supra* note 1, at 107-08.

38. *See also* Richard L. Stroup & Sandra L. Goodman, *Property Rights, Environmental Resources, and the Future*, 15 HARV. J.L. & PUB. POL'Y 427 (1992).

39. Barney Dowdle & Steve H. Hanke, *Public Timber Policy & the Wood-products Industry, in* *FORESTLANDS PUBLIC & PRIVATE 77, 89* (Robert T. Deacon & M. Bruce Johnson eds., 1985) (quoting BERNHARD E. FARROW, ECONOMICS & FORESTRY (1902)).

40. *Id.*

personal gain.[41] Hotelling recommended governmental regulation of natural resource exploitation for the good of future generations.[42] More recently a resource economist with the Washington-based think tank Resources for the Future, Sterling Brubaker, repeated the familiar claim that "securing the interests of future generations can only be protected by public intervention."[43]

Despite its widespread acceptance, the claim that the public sector is more far-sighted in its investment strategies than the private sector has not been confirmed.

A fundamental characteristic of private property is that changes in the value of a privately owned resource bring all of the anticipated future benefits and costs of today's resource decisions immediately to bear on the resource owner. Property rights provide long-term incentives for maximizing the value of a resource, even for owners whose personal outlook is short term.[44]

If using a tract of land for the construction of a toxic waste dump reduces its future productivity, that construction lowers its value *today*, and the decline in the land's value is a direct reduction in the owner's wealth. That happens because land's current worth reflects the net present value of its future services—the revenue from production or services received directly from the land, minus the costs (including amounts that must be paid to anyone harmed by escaping wastes) required to generate the revenues.[45] This assumes, of course, that investors are not fooled by a lack of knowledge. Investment advisors and environmental watchdogs help them in seeking to be the first to learn, so they can be the first to "bail out" of ownership shares in a troubled firm—or buy into a firm that has found better ways to deal with liabilities. Can problems be hidden? Yes, just as they can be hidden from regulators. The difference is that investors have far more personal wealth at stake, and thus a stronger incentive to learn problems and prospects early, before other investors in order to avoid losses or to earn profits. The future revenues minus future liabilities, discounted to present value terms, constitute the asset value of the resource; estimating true values of these net profits is the stock in trade of wise investors.[46] Both investors and firms make mistakes. From time to time, there are enormous corporate losses borne by them.[47] Having had

41. Harold Hotelling, *The Economics of Exhaustible Resources*, 39 J. POL. ECON. 137 (1931).

42. *Id.*

43. Sterling Brubaker, *Land Use Concepts, in* GOVERNMENT INTERVENTIONS, SOCIAL NEEDS AND THE MANAGEMENT OF U.S. FORESTS 95, 103 (Roger A. Sedjo ed., 1983).

44. *See also* Richard L. Stroup, *Discount Rate, in ENCYCLOPEDIA OF THE ENVIRONMENT 140-42 (1994).*

45. *Id.* at 140.

46. *Id.*

47. For some significant examples of such errors with respect to consumer goods, *see Flops*,

this experience however, these shareholders operate in the future with 1) greater knowledge won at a high price and 2) investment capabilities that are diminished by the amount of their losses. Successful investors learn from experience also, and they operate with portfolios that have been enlarged by their past profits.

Thus, fewer services from a privately owned resource, or greater costs associated with it in the future, mean lower value (and less wealth for the owner) now [48] The day an appraiser or potential buyer can see future problems is the day that the market value of the property, and thus the wealth of the owner, declines by the amount of the reduction in potential buyers' willingness to pay for the resource. Not only does using land to store hazardous waste reduce future options for the land's productivity, but the value also may be reduced by the risk of future lawsuits if the wastes leak and cause damage to other people or property

This is true even if the owner of the resource is a corporation, and the corporate officers, rather than the owner-stockholders, are in control. Corporate officers may be concerned mainly about the short term, not expecting to be present when future problems arise, but property rights hold such decision-makers accountable.[49] If a current action causes the expectation of future problems, or if current expenditures are seen to promise future benefits, those who buy and sell stock will push the stock price up or down accordingly, capturing the reduction or the increase in future net benefits.

Is the government likely to be a wise steward? Perhaps. But no incentive exists, analogous to the prospect of capital gains to reward social value created or preserved, and losses to punish the destruction of social value, when the resource is publicly owned.[50] For the individual voter, politician or bureaucrat making decisions in the political sector to constantly seek greater social benefit is a selfless act indeed.[51] In the United States, the majority of citizens of voting age have consistently been found to be unable to name their congressional representatives.[52] Citizen-voters

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BUS. WK., Aug. 16, 1993, at 76-82.

48. Stroup, *Discount Rate, supra* note 44, at 140.

49. The corporation may seek to escape responsibility for pollution, by looking for jurisdictions—foreign nations included—where it will not be held accountable. But it is hard to see why any democratic jurisdiction, unless it is desperately poor, would allow firms to operate when they can escape liability to local citizens. In the U.S., there is no indication that competition among the states for industry has led them to lower water quality regulations. *See* Terry L. Anderson & Peter J. Hill, *Environmental Federalism: Thinking Smaller*, PERC POL'Y SERIES, Dec. 1996, at 12.

50. *See also* Richard L. Stroup, *Controlling Earth's Resources: Markets or Socialism?*, 12 POPULATION AND ENV'T: A J. OF INTERDISC. STUD. 265 (1991).

51. *Id.* at 269-71.

52. *See, e.g.*, SENATE COMM. ON GOVERNMENT OPERATIONS, *Confidence and Concern: Citizens View American Government*, at 215-16 (U.S. Gov't Printing Office 1974) (this Louis Harris poll

as a group will bear the burden of mismanagement and capture the benefits of better management, but there is a key difference from operations in the private sector: the citizen-voter is unable to sell his or her stake in the resource in order to avoid an anticipated future cost; and unable to buy a larger stake when future benefits are anticipated, and thus cannot benefit personally from an early recognition of the problem or the prospect.[53] Costs and benefits are created and destroyed by the decisions of voters, politicians and civil servants, but these will be shared among all citizens. Being better informed confers no particular advantage to the individual, and being less informed imposes no special cost on the individual. Nor can the individual voter avoid these costs and benefits by voting differently For this reason, neither the scrutiny of investors in the private sector, nor the rewards and punishments brought to managers by the resulting changes in asset prices, is present to inform or to discipline decision makers when the resource is publicly owned.[54] The resulting difference in performance between private and public ownership can be seen in the empirical comparisons below

To test the hypothesis that private stewardship, when it can be arranged, will consider the future as effectively as, or better than, decisions made under public ownership, is desirable. But for good evidence of this sort, visible across individuals' experience, we need an assessment of individual operations. Land is seldom sold by government in a straightforward manner. Trades exist, but estimating values to make comparisons is difficult. How can we learn whether government has preserved or destroyed value on its lands before it disposes of them? Without a large array of market prices, such estimates are tricky So we turn to other market evidence. This section describes research that compares and contrasts the time horizons reflected in decisions in two areas in which both public and private decisions are made. The major emphasis is on assets used to provide public services, while research in employee compensation and pension funding is described more briefly

The logic of wealth maximization in the private sector suggests that maintenance will systematically be deferred more in the public sector than in the private sector. For a privately owned business, preventive maintenance, which extends asset life and maintains asset values, is a part of long-term investment strategy, since failure to perform such maintenance reduces the current value of the assets, and thus the value of the business. Government budgets, in contrast, place capital purchases, maintenance expenditures and current operating expenses in the same category, with no

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determined that 54 percent of citizens could not name their congressional representative).

53. *See* Stroup, *Controlling Earth s Resources*, *supra* note 50, at 270.

54. *Id.* at 275.

attempt to distinguish among them.[55] The value of capital assets in use is not evaluated in any capital market, so there is little incentive to maintain maintenance when the same funding could be used to support spending on current services that yield visible and immediate results.[56] Yet doing so runs down the public capital stock, yielding real but deferred costs that must be paid later if the level of services is not to fall. This situation provides public officials with a strong incentive to defer routine maintenance until major restoration or new capital purchases are required. The latter can be financed with borrowed funds, again deferring costs into the future. Future voters have no say today

Few empirical studies have compared maintenance practices and their effects on service-life duration between publicly and privately owned assets. But one such study of the local mass transit industry is available; its results are consistent with the claim that private companies attempt to preserve the value of their capital assets to a greater extent than government organizations.

Federal Reserve economist Brian Cromwell observed the maintenance practices of owners of mass transit vehicles around the United States. He found that private companies expend greater resources on maintenance, and that privately owned transit buses have longer in-service lives and do not deteriorate as rapidly as public buses.[57] Such a comparison may seem to have little to do with land use and land management. But the same questions dominate both situations: is the sacrifice today made up for by the benefits provided tomorrow?

Will private owners pay now for benefits to be derived later? Privately owned transit companies were shown in the study to devote more labor hours to fleet maintenance than public agencies do (14 to 17 percent more, after controlling for wages, operating conditions,. fleet composition and age).[58] Added maintenance is costly and reduces short-term profits, but if properly chosen will increase asset value and prolong asset life. The added maintenance performed by private companies allows them to keep their buses in service longer. Over 38 percent of the buses in private fleets are more than 12 years old, as compared to 22 percent of public fleets.[59] The

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55. HARVEY S. ROSEN, PUBLIC FINANCE 419 (2d ed. 1988).

56. *See* Stroup & Goodman, *supra* note 38, at 433-34.

57. Brian Cromwell, *Capital Subsidies and the Infrastructure Crisis: Evidence from the Local Mass-Transit Industry*, 25 FED. RESERVE BANK OF CLEV. ECON. REV. 11, 16 (1989).

58. *Id.*

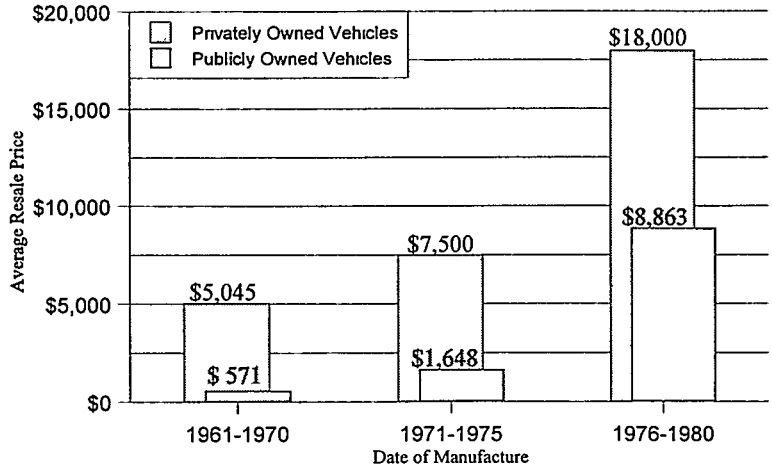
59. Cromwell's study focuses on the effects of federal capital grants administered by the Urban Mass Transit Administration (UMTA) on maintenance and scrappage rates of public sector fleet vehicles. The UMTA requires local transit agencies to operate buses purchased with federal funds for at least 12 years or 500,000 miles. Failure to do so results in ineligibility for federal assistance with new capital purchases. Cromwell shows that this 12-year limit is below the potential operating life of 15 to

better-maintained buses also are worth far more when they are sold. A similar logic and similar financial pressures face the owner of any asset, such as land, and any business, such as a forest, farm or ranch.

The figure below[60] shows part of Cromwell's result: public equipment depreciates more rapidly than private equipment. Cromwell used price information collected on 645 mass transit vehicles sold by private and public bus companies in 1987 and 1988.

Private Busses Keep Capital Value

(Maintenance is Better)



The dramatic differences in resale prices of busses between the public and private sector, after correcting for local factors such as the quality of the streets and other differences in bus routes, supports the contention that maintenance increases an asset's value. It also indicates that for the case studied, the maintenance of privately owned assets was superior to that of publicly owned assets, and provides some support for the claim that private asset owners, mindful of the effects of deferred maintenance on their current wealth through the capital market, more fully consider the effects of future asset values in their investment strategies than do public officials, who are always under pressure to serve current voters rather than future voters. Without a capital market to allow today's voter to gain personally by acting as if future costs and benefits matter, current voters appreciate current services more than future benefits.

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20 years for standard bus models when properly maintained. *Id.* at 15-16.

60. *Id.* at 15.

The case of deferred maintenance in publicly owned bus systems is not an isolated case. In its investment strategies affecting public assets, the public sector has demonstrated a strong tendency to focus on immediate pressures rather than society's long-term needs.[61] When setting spending priorities, public officials face hard choices between providing services that yield visible and immediate benefits, and those that yield less obvious future benefits. The structural and political incentives they face create an apparent preference to maximize current services and defer costs into the future.

The analytical equivalent of deferred maintenance on assets is deferred compensation for employees in the public sector compared to those in the private sector. Employers in the private sector can offer more deferred compensation relative to wages and other forms of current pay, but the cost does not change. Deferred compensation results in either payments now into, for example pension funds, or the buildup of liabilities for future payments. Both current pay and the buildup of liabilities lower the market value of the firm (and thus the wealth of the owners) immediately

The public sector, in contrast, has no "balance sheet" or market-determined asset value which will decline when future liabilities are incurred. So when more of the total compensation can be deferred in the public sector, costs can be delayed into the future. Today's budget can be concentrated on providing more services for current constituents, at the expense of future taxpayers. George Peterson indicates the extent of the government's pattern of postponing payment for current services when he compares deferred maintenance of public works to unfunded pension liabilities: "These are all ways," he says, "that the current generation of taxpayers can consume public services, yet shift some of the costs of paying for them to future taxpayers."[62] In summary, it is the institution of public ownership and political control, not short-sighted public decision makers, who determine this outcome. The analysis here in no way condemns the individuals (politicians and executive branch public servants) who make public policy Public ownership itself explains the problem; it precludes the operation of a capital market for control of the owned resources, and thus fails to produce the monitoring of resource use, information on the possible new uses that potential buyers or renters might discover and try Missing also are the incentives to heed the constant flow of information that comes into a private market.

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61. *See* Stroup & Goodman, *supra* note 38, at 433-39.

62. Urban Institute, *America's Urban Capital Stock: An Interview with George E. Peterson*, URBAN INST. POL'Y & RES. REP., Spring 1980, at 7-8.

V CONCLUSION

The lessons outlined above apply to land just as they apply to other resources. Private ownership, with enforcement of rights via common law and with cooperation arranged via markets, protects environmental quality for a number of reasons:

1. Private ownership and control of land, as in the case of resources in general, leads on balance to more efficient market allocation, which leads to prosperity Prosperity is closely correlated with the ability and willingness to pay for environmental protection. It also leads to more technically efficient use of resources and thus a reduction of waste and pollution.

2. Private ownership of land, if the required clearly defined rights are present and effective, allows for mutually agreed upon changes in land use, in response to changing circumstances, through trading that is generally cooperative, in contrast to often acrimonious political decisions.

3. Private ownership of land causes the owner's personal wealth to be, in effect, a hostage to the owner's protection and conservation of the owned land. The capital market operates as the voice of future potential users, providing both information (in land markets) about market participants' estimates of future values that can be compared to current use values—uses that may increase or reduce future values and thus asset values. The capital market (land asset market in this case) provide also the incentive for owners to act on this information, as if they care about future users, in order to conserve or increase the portion of their wealth that is represented in land asset value.

4. Common law protects property owners and others who are affected by pollution, independent of the political might of those protected. Rights to be free of harmful pollution are upheld in the courts, when owners or other threatened parties seek protection and can show that a polluter is causing (or would cause) a problem.

Public sector ownership means political and bureaucratic control, and a lack of both information-generating markets and the incentive to react constructively to changing circumstances. Only politics and bureaucratic procedures remain, to identify and implement alternatives that result in mutually beneficial results for all who are sufficiently interested to approach the trading table. Government ownership has its trading possibilities, but rancor and animosity seem consistently, and for understandable reasons, to play a larger role. To discredit one's competitors is often a winning strategy in a public setting. And a great many mutually beneficial trades do not happen, when the political and bureaucratic systems do not make the personal rewards to individual entrepreneurial activity large enough to attract and to finance the persistence that is needed for innovation in the context of government decision making.

To be sure, no system is perfect. The failure to meet the goal of perfection should not cause the rejection of either traditional government control or the market mechanism. However, having examined several areas where reliance on private solutions can be compared with governmental control, this article has argued that private ownership and control and the market system, are seriously underrated and in fact have worked far better in numerous venues than traditional beliefs would suggest. When compared with continued public ownership, private ownership of assets such as land has a great many virtues in regard to environmental management and stewardship on behalf of future generations.